

IN THE CLAIMS:

Please amend claims 1, 9, 11, 19, 21-31 and 33 and cancel claim 32 without prejudice or disclaimer as follows.

1. (Currently Amended) A method for ~~implementing an adaptive channel estimator~~, comprising:

determining from a received signal at least one variable representing statistical characteristics of the channel; ;

determining a prefilter ~~by means of~~using at least one variable representing the statistical characteristics of the channel; ;

adapting sample rate of the prefilter output for a channel estimator.

2. (Previously Presented) The method of claim 1, wherein the statistical variable is Doppler spread, the form of Doppler power spectrum, the width of Doppler power spectrum, the speed of a radio transmitter, channel coherence time, correlation between channel measurements or signal-to-noise ratio.

3. (Previously Presented) The method of claim 1, wherein the sample rate is adapted by decimation.

4. (Previously Presented) The method of claim 1, wherein the sample rate is adapted by interpolation.

5. (Previously Presented) The method of claim 1, wherein the sample rate is adapted in relation to the prefilter input signal and the at least one variable representing the statistical characteristics of channel determined from the received signal.

6. (Previously Presented) The method of claim 1, wherein the length of the channel estimator is constant.

7. (Previously Presented) The method of claim 1, wherein the Doppler spread is measured at the prefilter input.

8. (Previously Presented) The method of claim 1, wherein the Doppler spread is measured at the prefilter output.

9. (Currently Amended) The method of claim 1, wherein the Doppler spread or the correlation between the channel measurements are kept at least substantially constant by means of using feedback at the prefilter output.

10. (Previously Presented) The method of claim 1, wherein the bandwidth of the decimator and interpolator filters changes in relation to a change in the sample rate.

11. (Currently Amended) A prefiltering arrangement for implementing an adaptive channel estimator, the prefiltering arrangement comprising:

a determining unit configured to determine from a received signal at least one variable representing statistical characteristics of the channel,

a determining unit configured to determine the number of prefilter taps ~~by means of~~ using at least one variable representing the statistical characteristics of the channel,

an adapting unit configured to adapt sample rate of the prefilter output for a channel estimator.

12. (Previously Presented) The prefiltering arrangement of claim 11, wherein the statistical variable is Doppler spread, form of Doppler power spectrum, width of Doppler power spectrum, speed of a radio transmitter, channel coherence time, correlation between channel measurements or signal-to-noise ratio.

13. (Previously Presented) The prefiltering arrangement of claim 11, the arrangement comprising an adapting unit configured to adapt the sample rate by decimation.

14. (Previously Presented) The prefiltering arrangement of claim 11, the arrangement comprising an adapting unit configured to adapt the sample rate by interpolation.

15. (Previously Presented) The prefiltering arrangement of claim 11, the arrangement comprising an adapting unit configured to adapt the sample rate in relation to the prefilter input signal and the at least one variable representing the statistical characteristics of the channel determined from the received signal.

16. (Previously Presented) The prefiltering arrangement of claim 11, wherein the length of the channel estimator is constant.

17. (Previously Presented) The prefiltering arrangement of claim 11, wherein the arrangement comprises a measuring unit configured to measure Doppler spread at the prefilter input.

18. (Previously Presented) The prefiltering arrangement of claim 11, wherein the arrangement comprises a measuring unit configured to measure Doppler spread at the prefilter output.

19. (Currently Amended) The prefiltering arrangement of claim 11, wherein the Doppler spread or the correlation between the channel measurements is kept at least substantially constant ~~by means of~~using feedback at the prefilter output.

20. (Previously Presented) The prefiltering arrangement of claim 11, wherein the bandwidth of the decimator and interpolator filters changes in relation to a change in the sample rate.

21. (Currently Amended) ~~An apparatus~~ ~~base station, in which a channel estimator~~
~~input signal is adapted, the base station,~~ comprising:

~~a means for determining~~ unit configured to determine from a received signal at least one variable representing statistical characteristics of the channel,
~~means for determining~~ a unit configured to determine the number of prefilter taps
~~by means of~~using at least one variable representing the statistical characteristics of the channel,

~~means for adapting~~ an adapting unit configured to adapt sample rate of the prefilter output for a channel estimator.

22. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the statistical variable is Doppler spread, form of Doppler power spectrum, width of Doppler power spectrum, speed of a radio transmitter, channel coherence time, correlation between channel measurements or signal-to-noise ratio.

23. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the ~~base station~~apparatus comprises an means for adapting unit configured to adapt the sample rate by decimation.

24. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the ~~apparatus~~base station comprises means for an adapting unit configured to adapt the sample rate by interpolation.

25. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the ~~arrangement~~apparatus -comprises means foran adapting unit configured to adapt the sample rate in relation to the prefilter input signal and the variable representing the statistical characteristics of the channel determined from the received signal.

26. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the length of the channel estimator is constant.

27. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the ~~arrangement~~apparatus comprises means fora measuring unit configured to measure the Doppler spread at the prefilter input.

28. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the ~~apparatus~~arrangement comprises ~~means for a~~ means for a measuring unit configured to measure the Doppler spread at the prefilter output.

29. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the Doppler spread or the correlation between the channel measurements is kept at least substantially constant at the prefilter output.

30. (Currently Amended) The ~~base station~~apparatus of claim 21, wherein the bandwidth of the decimator and interpolator filters changes in relation to a change in the sample rate.

31. (Currently Amended) A prefiltering arrangement, comprising:

~~first determination~~-means for determining from a received signal at least one variable representing statistical characteristics of a channel;

~~second determination~~-means for determining the number of prefilter taps using at least one variable representing the statistical characteristics of the channel of a prefilter using at least one variable representing the statistical characteristics of the channel; and

~~adaptation~~-means for adapting sample rate of a prefilter output for a~~of~~ the prefilter for an adaptive channel estimator.

32. (Cancelled)

33. (Currently Amended) ~~An apparatus, prefiltering arrangement for implementing an adaptive channel estimator, the prefiltering arrangement comprising:~~

means for determining from a received signal at least one variable representing statistical characteristics of the channel,

means for determining the number of prefilter taps ~~by means of~~using at least one variable representing the statistical characteristics of the channel,

means for adapting sample rate of the prefilter output for a channel estimator